



DIG FOR VICTORY
LEAFLET No. 9

HOW TO MAKE BORDEAUX AND BURGUNDY MIXTURES IN SMALL QUANTITIES

BORDEAUX MIXTURE

THIS is the original and still the most effective fungicide for use against potato blight. It is also useful against leaf spot of celery, leaf curl of peaches and almonds, as well as against a number of other diseases affecting mainly the foliage of plants.

Materials to use

Bordeaux mixture is prepared from copper sulphate (bluestone), lime and water. The copper sulphate, which should be at least 98 per cent pure, is best bought in the form of powder or granular crystals, as these dissolve much more readily in water than the large blue crystals.

Quicklime in lump form, fresh and free from impurities, was formerly the most common form of lime used, but nowadays, "hydrated lime" is more convenient; as sold commercially it is free from grit and very pure. It should *always be used quite fresh*, for the

material soon loses its strength in bags that have been opened and kept for some time. Both copper sulphate and hydrated lime can be purchased in small amounts from shops supplying horticultural requisites.

Preparing the mixture

The ingredients for making $2\frac{1}{2}$ gallons of spray are :

Copper sulphate	..	..	4 oz.
Hydrated lime	..	..	5 oz.
Clean water..	..	..	$2\frac{1}{2}$ gal.

A clean wooden, earthenware or (unchipped) enamelled bucket or other container to hold $2\frac{1}{2}$ —3 gallons is best, for copper sulphate corrodes metal vessels, but a galvanized bucket may be used if it is well washed afterwards.

Measure out $2\frac{1}{2}$ gallons of clean water into the container; pour off about a quart into an earthenware or enamelled jug, and stir into this the 4 oz. of copper sulphate. While it is dissolving, put the 5 oz. of hydrated lime into the water remaining in the container and stir well to make a milky solution.

When all the copper sulphate has dissolved, slowly pour the blue solution from the jug into the milk of lime in the bucket, stirring well all the time. The characteristic sky-blue colour of Bordeaux mixture will appear, and the spray is then ready for immediate use.

Prepared in this way, the mixture should be quite safe for use on most plants. To make sure, the bright, clean blade of a penknife (not stainless steel) should be dipped into it for about a minute. If the blade becomes tarnished or darkened with a deposit of copper, more hydrated lime must be added. A more sensitive test is to dip a piece of blue litmus paper, obtainable from the chemist, into the mixture. It should remain blue; if it turns pink, more lime must be added.

Bordeaux mixture should always be used the day it is made. It is best to pour it into the spraying machine through a fine wire gauze strainer or a piece of muslin to prevent any dirt from clogging the nozzle.

BURGUNDY MIXTURE

This is similar to Bordeaux mixture, except that washing soda is used instead of lime. It is probably still the most widely used potato spray and is very effective.

As a general spray, it is said to be rather more liable to cause scorching than Bordeaux mixture, but it is quite safe for use on potatoes for the control of blight, and on peaches and almonds for the control of leaf curl.

The details for making the spray are similar to those given above for Bordeaux mixture, washing soda being used in place of the lime. The proportions are:

Copper sulphate	..	..	4 oz.
Washing soda	..	..	5 oz.
Clean water	..	..	2½ gal.

The washing soda should be in fresh crystalline form and should be crushed to make it dissolve more readily ; if it is old and broken down to a white powder, the soda solution made from it will be too strong.

POINTS TO REMEMBER

Do not guess weights. Have the correct amounts of copper sulphate,

hydrated lime, or washing soda weighed out.

The sprays should be applied before the disease makes its appearance, or at least in the early stages before much spread has occurred ; they are preventive, not curative.

It is generally necessary to spray potato crops two or three times during the growing season at intervals of 2 to 3 weeks, to renew any deposit washed off by rain and to ensure that all new growth is properly covered and protected.

Spray on a fine day, but preferably not in direct, hot sunlight ; early mornings or evenings are often the best times. The spray will then dry before rain comes and will stick satisfactorily to the surface of the plants. Do not spray if a frost is likely to be experienced the same evening.

The spray should reach and cover the under sides of the leaves, if possible, as well as the tops and stems. If no sprayer or syringe is available, Bordeaux or Burgundy mixtures may be applied to potatoes by sprinkling from a watering-can with a fine rose, but a fine misty spray from a suitable nozzle is preferable.

Spraying may prove injurious rather than beneficial in the neighbourhood of certain industrial towns, owing to interaction between substances in the spray and acid fumes in the air. Local advice should therefore be sought before spraying within about ten miles of large industrial centres.

*Issued by the Ministry of Agriculture and Fisheries,
St. Andrew's Place, Regent's Park, London, N.W.1*

